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marked by much freshness, both in its general tenor and style, and in the illustrations, which have been gathered even from the very latest pages of current ecclesiastical history. This feature of freshness in illustration is one which much enhances the interest and value of the work; although, of course, some risk is thereby incurred of doing injustice in individual cases, where the verdict of the day is liable to be reversed or modified by the calmer judgment of the future and in the light of additional information.

The style of the volume is correct, clear, and forcible, though an occasional blemish may be pointed out in the use of expressions which a little more severity of revision would have rejected. Such colloquialisms as "dillidallied" and "shillishallied," "being nowhere," "handy," "muddling of its clear stream," "meet them half-way in interest," are hardly to be approved in a treatise of this character. We observe also, now and then, a slight inaccuracy, such as "a church that is *few* in numbers," "equally as well," "vitalest."

The very copious Index makes the book peculiarly serviceable as a work of reference. We confess ourselves, however, a little disappointed in consulting the Index, at not being able to find the words "Communion" and "Fellowship"; although the "Folly" of a venerated father in the Church is duly noted, and the maker of the Index has established his own anti-liturgical character by giving a prominence to "Calomel" and "Quinine" which we should hardly have looked for in an ecclesiastical treatise.

We were tempted to venture upon a little criticism of the "Dedication," as being too much in the manner of a studied eulogium; but it is a tribute so hearty, and withal is a testimony so well deserved, that we feel more inclined to congratulate both the author and his friend.

4.—*Classical and Scientific Studies, and the great Schools of England: a Lecture read before the Society of Arts of the Massachusetts Institute of Technology, April* 6, 1865. By William P. Atkinson. *With Additions and an Appendix.* Cambridge: Sever and Francis. 1865. 8vo pamphlet. pp. 117.

The much-debated question of the comparative value of classical and of scientific studies as means of mental training, Mr. Atkinson does not decide absolutely in favor of either. Both are needed, he thinks, but at different times. Their functions are distinct, and neither can replace the other; but the study of outward things should come first, following the hint that Nature gives in developing the observing faculties before she develops the reflective. The phenomena of the material world — the divinely appointed instruments for the cultivation of the observing faculties — first attract the young mind, and the study of them ought to be the earliest in the school course; whilst the study of the mind, including the study of language as the instrument of thought, being the chief agent in the development of the reflective faculties, ought to come later. "I should not, perhaps," he says, "have been tempted into so old a controversy, if there had not fallen in my way a document which seems to me to throw a new and most extraordinary light upon the whole subject." This is the Report of the Parliamentary Commission appointed in 1861 to investigate the condition of Eton and of eight other of the great public schools of England. The Report, from Mr. Atkinson's account of it, certainly shows a very surprising state of things at Eton; and what is true of Eton seems to be true to some extent of the great English public schools in general.

There was a common impression that an undue importance was given in England to the niceties of classical learning, especially to the mechanism of Greek versification. But it seems that not only are other studies neglected, but even Latin and Greek are not well taught, — at Eton very badly taught; that "the boys go up to Oxford, not only not proficient, but in a lamentable state of deficiency with respect to the classics"; and that even the great majority of those who take a degree in Oxford, after having spent ten or twelve years of their life in the all but exclusive study of Latin and Greek, are unable to construe offhand the easiest passages in either language, if they have never seen them before. This is certainly a very curious result. It is not at once obvious, however, what light it throws upon the question at issue. What Mr. Atkinson alleges is, that physical science is a better means of early mental training than Latin and Greek. What he proves is, that Latin and Greek are very imperfectly taught in England, and natural science hardly at all. This does not prove that Latin and Greek well taught may not be a good means of training, nor that natural science is a better. The effect of the evidence, indeed, is rather to make us distrust unqualified statements about the merits of any particular course of study. Certain it is that many Englishmen somehow contrive to get a very good mental training. Were evidence of this fact wanting, perhaps the very existence of this Commission and its Report would be enough to furnish it. If the training is got from their schooling, the schooling cannot be so very bad. If it is got from something else, then the effect of one course or another is of less importance.

More directly to the point are the opinions of various eminent scientific men, such as Faraday, Owen, Lyell, and Carpenter, given in their testimony before the Commission. Dr. Carpenter, for instance, says: "I think that a lad of from ten to twelve years of age is better fitted to be led to observe and reason upon what he observes in objective phenomena, than he is to reason upon abstractions." But what is an objective phenomenon, as contradistinguished from an abstraction? Is a stone, for instance, more truly an objective phenomenon than a word? And does its objectivity mean merely that it is something outside of the mind, with which the mind has of itself nothing to do? If so, it is precisely its objectivity that must be got rid of before it can be known or reasoned upon. There is a notion somewhat prevalent, that from outward nature the mind receives knowledge directly and ready made, and that it gets thus a result unvitiated by the effects of its own action; whilst in dealing with mental phenomena it is only working over its old stock, recombining and arranging, but not adding to its ideas. But the stone does not become an objective phenomenon until the mind has classified and named it, that is, reduced it to an abstraction. On the other hand, the abstract word denoting the class to which the mind has assigned the thing is not a *mere abstraction*, in the sense of having lost any part of the reality that belonged to the perception of the thing by the senses. What it stands for has no existence or meaning for us without the name, — no more than the name has without the thing. Nothing, in short, is known to us but ideas; the only difference is, that in some ideas we perceive more clearly that it is thought we are dealing with, whilst in others the thought is more obscured, dim, and perceived only as feeling, sensation, &c.

But were the antithesis between observation and reflection real and thorough-going, so far from strengthening the claims of physical studies, it would go far towards annulling them altogether. Were it possible to observe *without* reflecting, or to cultivate observation without at the same time cultivating reflection, would not this be so far to turn the observer into a brute? Do not all tenable distinctions between man and the brutes come at last to this, that they *know*, but he knows and *reflects* upon his knowledge? Why is it, for instance, that, with all their acuteness of sense, the race of dogs makes no progress, but stands just where it did two thousand years ago? Is it not that the dog is unable to detach his perception from himself, from the immediate use or occasion, and see it as something independent and impersonal, — in other words to reflect upon it, — and so, of course, cannot communicate his experience, or most imperfectly, to another? What Mr. Atkinson undoubtedly means is, not that the study of the material world develops the observing faculties and not the reflective, but that the reflective faculties are in certain cases easiest reached through the observation of external nature. Allowing this to be true, it is reason enough, no doubt, for the preference of scientific studies in these cases; but then it is not because a different effect is produced, but because the same effect is more readily produced by these than by classical studies. Both alike aim, of course, at something beyond the information immediately conveyed, which in the one as much as in the other is only the vehicle of instruction, not the instruction itself. The end proposed is in all cases alike, — training of the mind, not of the senses. It is this that makes the accurate observer, quite as much as it makes the profound thinker. The practised microscopist, for instance, — what change has taken place in him? No doubt there is corresponding physical development; but the main point is the training of the judgment. He does not see, perhaps, more than another, — perhaps less; but he understands what he sees and knows what it proves. The sportsman or naturalist who hears the cry of a bird or animal unnoticed by his companion, does not necessarily hear better, does not even hear *that sound* better, i. e. it does not seem louder to him, but he knows its meaning. The sound exists only for him in whom it awakens reflection. The argument in favor of scientific studies, then, is, not that they proceed upon facts, while classical studies proceed upon abstractions, but that with certain persons or at a certain time of life they are more apt to lead the student to make his abstractions for himself, that is, to think, whilst the classical course is more apt to lead him to accept other people's abstractions, that is, to repeat, without thinking. But this ought to be shown in detail and by experiment; the question is only obscured by attracting attention to the nature of various kinds of knowledge, or of the various faculties of the mind, or their comparative values or utilities. What we want to know is the comparative effect of different studies upon the same faculty, or rather upon the mind, as the unity of all the faculties.

Mr. Atkinson would be the first to declare that education implies development of all the mental powers. He remarks that "the advocates of science have been too prone to confound education with information"; and he cites as eminently true Mr. Pattison's saying that the issue between the classics and science ought to be placed on "the comparative fitness of the two subjects to expand the powers, to qualify for philosophical and comprehensive views." But he does not show precisely how the study of scientific facts is likely to lead to this result. It does so in *some* cases, no doubt. But then the same may be said of almost any occupation. The business of a carpenter, for instance, or a sailor, might give occasion for all that is essential in character. But the question is, rather, what will produce the desired result with the least friction and waste of power, and thus favor success where, as is usually the case, there is no power to spare. If you propose natural history for the average boy, without special gift or inclination, the anxious parent, if he be a layman in science, finds a difficulty in discerning the connection between a minute acquaintance with beetles and that mental training which he desires; and his embarrassment is increased by finding that proficients in science very often show no due appreciation of training, and seem to think it signifies only an acquaintance with certain classes of facts, as if the mind's *capacity* meant only its distensibility to contain more and more facts. Even so considerable a man as Faraday, in the evidence quoted by Mr. Atkinson, declares that the phrase "training of the mind" has to him a very indefinite meaning, and gives as an instance of the defect left untouched by a literary education, that highly educated persons cannot remember what water is composed of, though he has told them over and over again. The chemical elements, the geological strata, or other like particulars, may serve the turn of such men as Faraday or Humboldt, but it does not follow that they will have the same value to another, nor that these eminent persons are the best judges of their value to ordinary mortals. It is they that give these things their value; in their minds the facts seem necessarily associated with thoughts, but the association is not necessary or universal. Mr. Atkinson has much to say about classical pedants; but the scientific pedant is quite as bad, and perhaps more likely to become troublesome in this country.

The Rev. George Moberly, Head-Master of Winchester School, says in the course of his evidence: "Every man of liberal education is the better for not being ignorant of anything; but compared with other things, a scientific fact, either as conveyed by a lecturer or as reproduced in examination, is a fact which produces nothing in a boy's mind. It is simply a barren fact, which he remembers or does not remember for a time, and which after a few years becomes confounded with other facts and is forgotten. It leads to nothing, it does not germinate, ... these things give no power." Many persons will sympathize with Mr. Moberly, and will find in what he says much that is confirmed by their own experience, — indeed, a pretty fair account of what might be expected if elementary physics and natural history were substituted at once for Latin and Greek in our schools. The present course may be barren, but would this be more fruitful? These are the doubts of the ignorant. Mr. Atkinson has full faith that, taught as they might and ought to be taught, these things would assume a very different aspect from the dry bead-roll of facts they too often seem. His experience may give him ample warrant for his belief. A little actual experience, on a basis wide enough to include a considerable variety of natural gifts and dispositions, is worth a great deal of *a priori* speculation. One thing is clear, the decision cannot depend on the abstract nature of the study, but on the effect it actually has in the individual case. Where there is talent or decided set in the nature in a particular direction, this is doubtless the safest guide. In the absence of positive indications of this sort, negative signs may be useful, for example, less repugnance to one kind of studies than to the rest, where none are liked. But this is an equivocal test, for the preference may be due to the greater opportunity afforded of escaping any real exercise of mind, while keeping up the feeling and the appearance of it. Children and uncultivated persons generally, provided they are not wanting in intelligence, have an appetite for unconnected facts, for incident and novelty for its own sake, which indicates a mind awakened but not developed, and equally averse to total stagnation and to continuous exertion. The youthful "collections" of birds' eggs and the like, the curiosity about workshops, or apparatus, or to see work done, are natural and healthful; but they are due in great measure to the desire to get out of doors, to escape regular tasks, and to get the sensation of stir and movement without paying the price. The part of education is not to perpetuate this stage of growth, but to use the means it affords for a further advance. To supply the pupil with occupation that would tend to keep his mind at this point, would not be to educate his intellect, but the reverse.

Such are some of the scruples that so general a statement as Mr. Atkinson's naturally suggests. It is for him to show, as he is most competent to do, how his plan may be made in practice to secure the advantages and avoid the disadvantages upon which all are pretty well agreed. The utmost that teachers or systems can do is in any case mostly negative, and consists in removing obstacles and in preventing force from being wasted by too much diffusion, or by the confounding of incidental advantages with the main end. This office, however, is far from unimportant, and its importance is the greater, the less pronounced the set of the mental current in him who is to be taught. It is vigor of flow that is wanted, and that direction is best which most favors this. The danger most to be dreaded in England may very likely come from the influence of class prejudice and routine, tending to make education merely a conventional distinction, the badge of social rank. In this country there is little danger in this direction; the danger is rather that extraneous advantages of another kind, the general utility or the tangible, practical nature of the information acquired, will be confounded with the training of the mind itself. If it is really this that we seek, everything that does not contribute to it is irrelevant, and the more irrelevant, the more palpable the usefulness for other purposes.

To praise the Parthenon as an excellent lime-quarry, would be as much as to say that it is good for nothing better.

It is sometimes asked, Why may not the same advantages that are claimed for the study of Latin and Greek be afforded by the study of French and German? So probably they may; it is only a question of fact, how they are used. If the study of either of these languages be pursued chiefly with a view to some external advantage that may happen to attach to the possession of them, it is this that will chiefly appear in the result. But to the mind all advantages are external except its own growth and culture. Whatever of the mental coin of thought is paid for any commodity, is so much of the mind's capital diverted from other uses. If French and German are studied rather than Latin and Greek, simply because of the greater likelihood that they will be used in after life, this prospect no more gives them an educational value than the prospect of a fellowship or a bishopric, which Mr. Atkinson thinks the chief stimulus in the English classical system, gives an educational value to Latin and Greek. It is true we often get more than we bargained for. The prospect of personal advantage of any sort may serve as incitement to exertions whose benefit is far beyond what was intended, just as the peg-top or the jack-knife serves as incitement to the unwilling school-boy. These bribes are of all degrees of fineness, and perhaps never to be quite dispensed with. But in comparing different courses of study we must take care not to confound the accidental inducements that one may offer by way of bribe to undertake it, with its proper effect as training. Both are highly important; but one is general and the other purely personal, to be settled only by the idiosyncrasies of the particular individual. Speaking generally, the more abstract the study, if by abstract we mean remote from all other aims except to exercise the mind, the better.

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5. — *Affixes in their Origin and Application, exhibiting the Etymologic Structure of English Words.* By S. S. HALDEMAN, A. M. Philadelphia: E. H. Butler & Co. 1865. 12mo. pp. 271.

THIS very correctly and elegantly printed book is, as no one can doubt who examines it, the fruit of not a little patient investigation and serious thought. Curious inquirers into the "etymologic structure" of our mother tongue will find it a valuable aid, and will have reason to thank its author for the rich body of materials which it presents, as well as for its numerous acute suggestions and apt and striking comments. It addresses itself rather to persons of special taste for word-analysis,